



Tank Emissions An Owner/Operator Perspective

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Goal



- ◆ **Understand tank emission sources and controls**
- ◆ **Understand why the controls are important**
- ◆ **Know where to find resources you need**

Current Situation



- ◆ **Tank emissions are receiving a lot of press**
- ◆ **You need to know how to accurately estimate emissions**
- ◆ **To properly permit and operate your tank**

Agenda Topics



- ◆ **AP-42**
- ◆ **Tanks 4.0**
- ◆ **Factors affecting emissions**
- ◆ **Basics of estimation**

Audience Benefits



- ◆ **Resources for estimating emissions**
- ◆ **Where emissions occur**
- ◆ **Accurate estimates**
- ◆ **Proper design and permitting**

AP-42 and Tanks 4.0



- ◆ **Chapter 7- Storage Tanks**
- ◆ **Chapter 13.5 – Industrial Flares**
- ◆ **Chapter 5.2 – Petroleum Marketing**

Resources for estimating

Mechanical Factors Affecting Emissions



- ◆ **EFR**
 - Deck type
 - Rim seal type
 - Deck fitting types

- ◆ **IFR**
 - Contact or non-contact deck

Where emissions occur

Tank Types

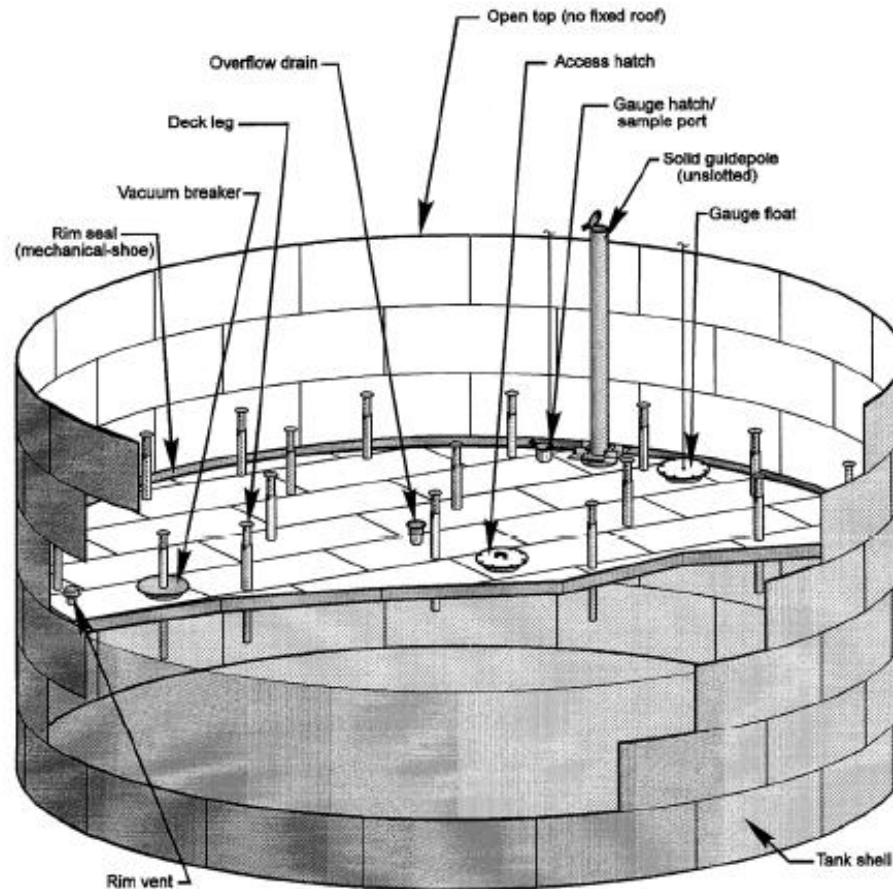


Figure 7.1-3. External floating roof tank (double deck).²⁰

Resources for estimating

Tank Types

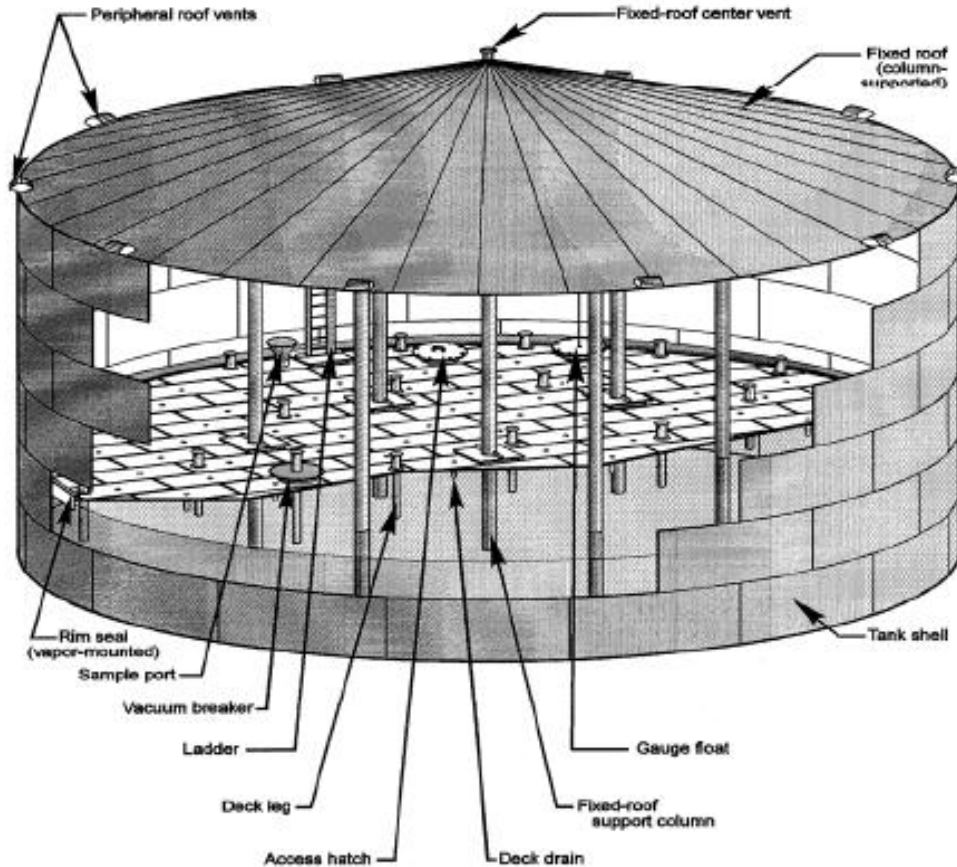


Figure 7.1-4. Internal floating roof tank.²⁰

Resources for estimating

Seal Types

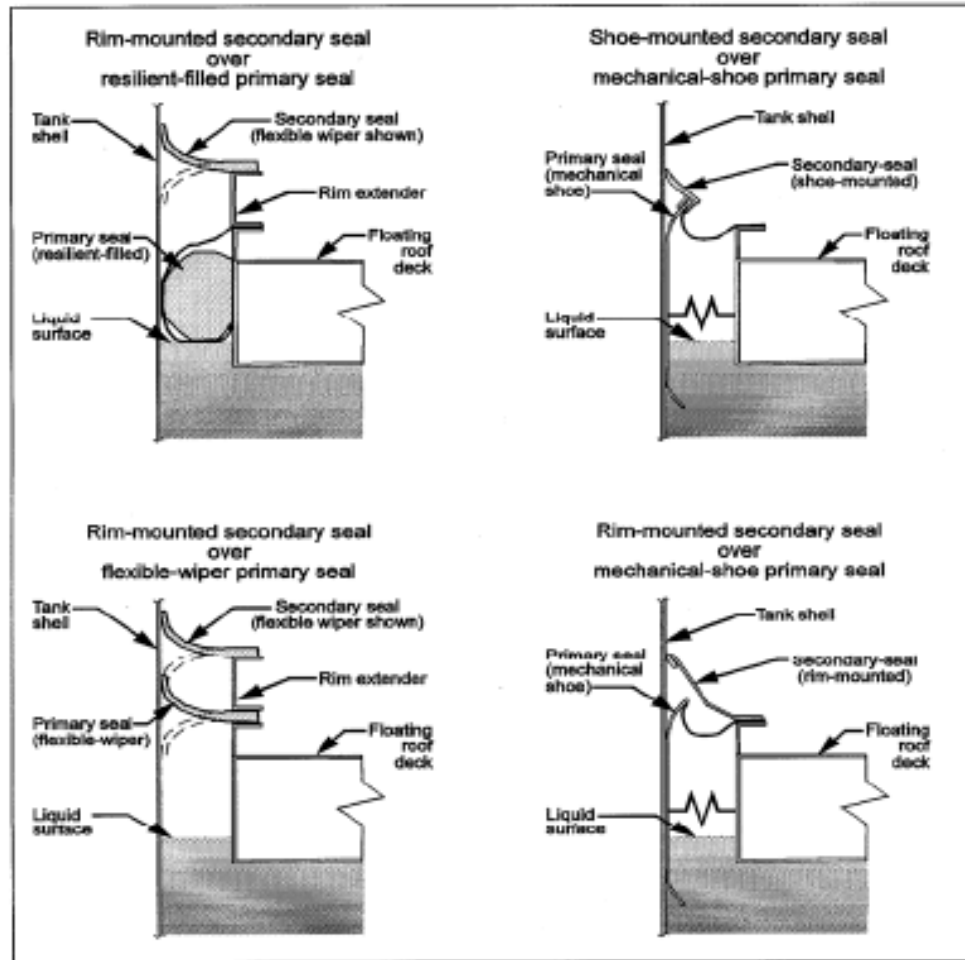


Figure 7.1-8. Secondary rim seals.²⁰

Resources for estimating

Mechanism for Emissions



- ◆ Deck fittings, deck, rim seal
- ◆ Fixed roof
- ◆ Withdrawal losses
- ◆ Standing storage losses

Accurate Estimates

Basics of Estimation



- ◆ **Normal Operations**
 - Rim seal + withdrawal + deck fittings + deck seams

- ◆ **When AP-42 won't work**

- ◆ **Tank roof landings**
 - Standing idle + filling

Proper design and permitting

Basics of Estimation



- ◆ **Condition of fittings and seal**
 - Regular monitoring
 - AP-42 applies only when seals are in average condition
 - Loose fitting seals or fittings

Proper design and permitting

Conclusion



Agenda Topics

- ◆ AP-42
- ◆ Tanks 4.0
- ◆ Factors affecting emissions
- ◆ Basics of estimation

Audience Benefits

- ◆ Resources for estimating emissions
- ◆ Where emissions occur
- ◆ Accurate estimates
- ◆ Proper design and permitting